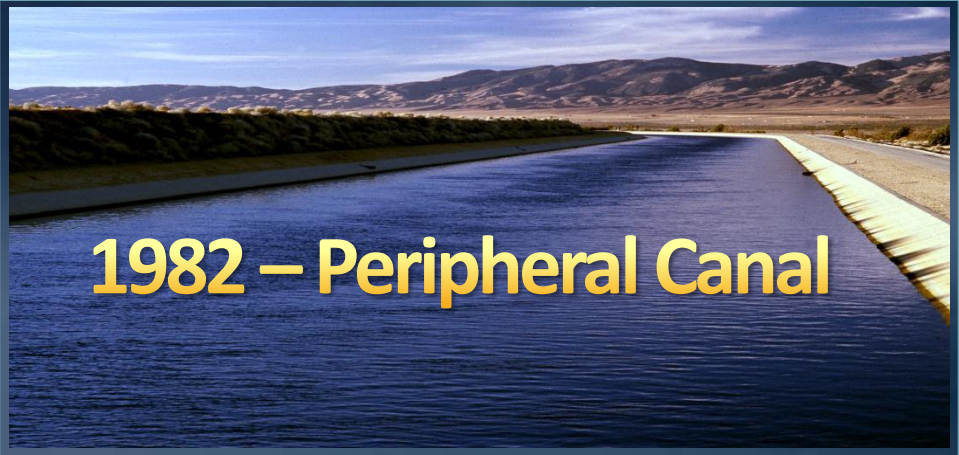
# US Congresswoman Grace Napolitano
# 2017 Water Forum
# August 31, 2017

# What Does CA Water Fix Mean For Southern California?

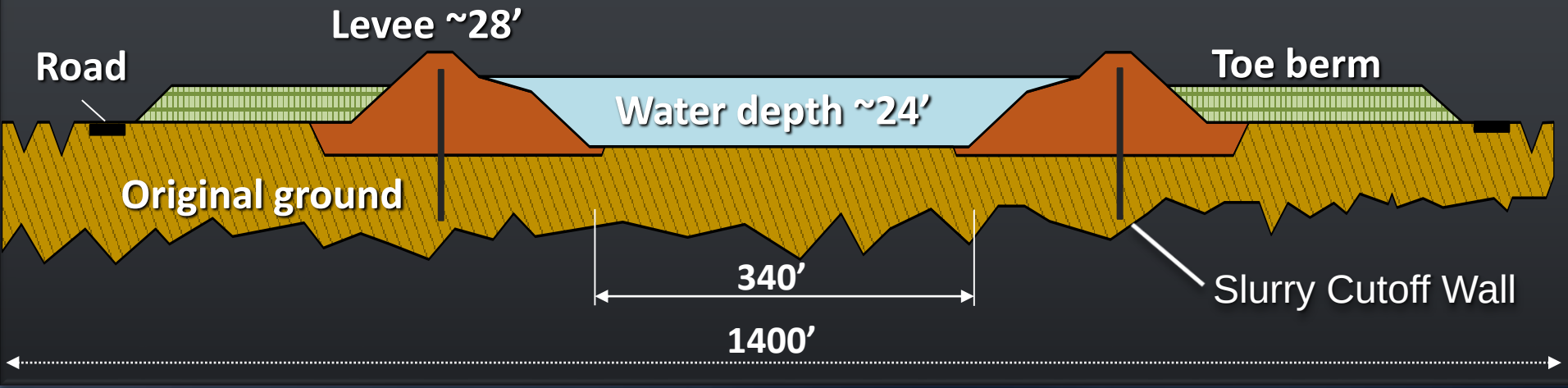
# Four Decades of Analysis

## 21st Century Approach

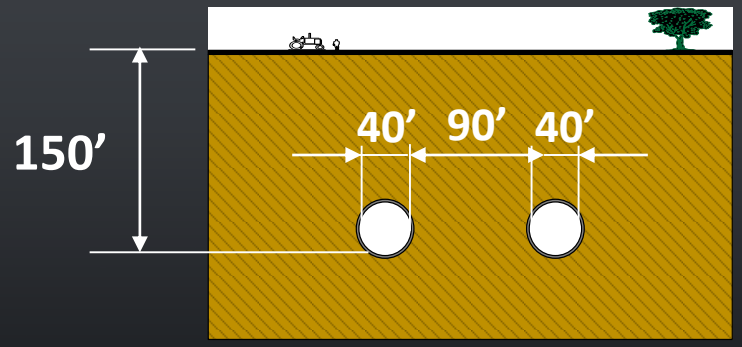
|  1982 – Peripheral Canal |  2017 – CA WaterFix |
|---|---|
| Above ground | Below ground |
| 21,800 cfs diversion | 9,000 cfs diversion |
| Mitigation only | Mitigation plus CA EcoRestore program |
| Regulatory only approach | Science & adaptive management |

# Reduced Footprint - Cross Sections

## Original Proposal – Open Canal

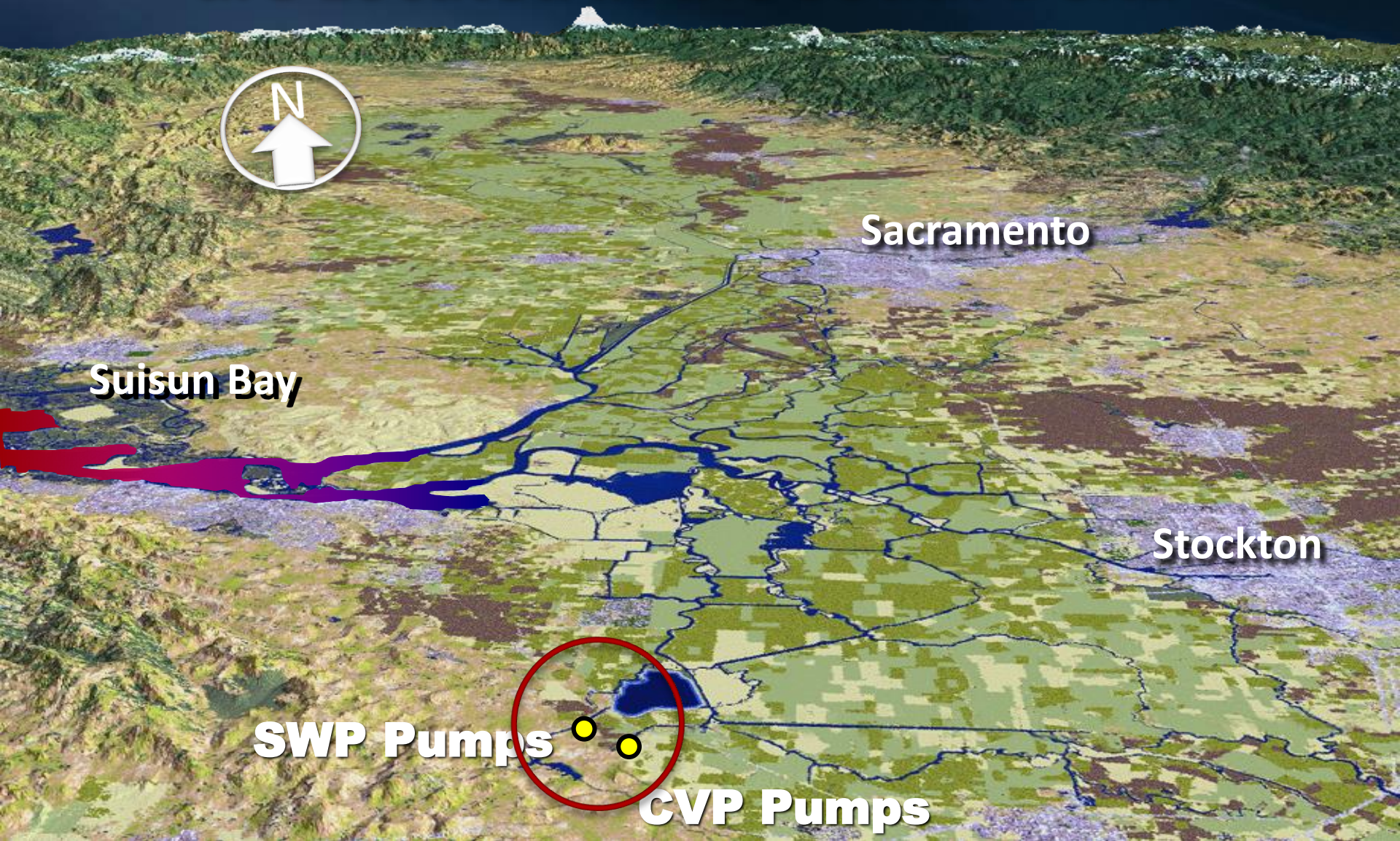



## Current Proposal – Underground Tunnels



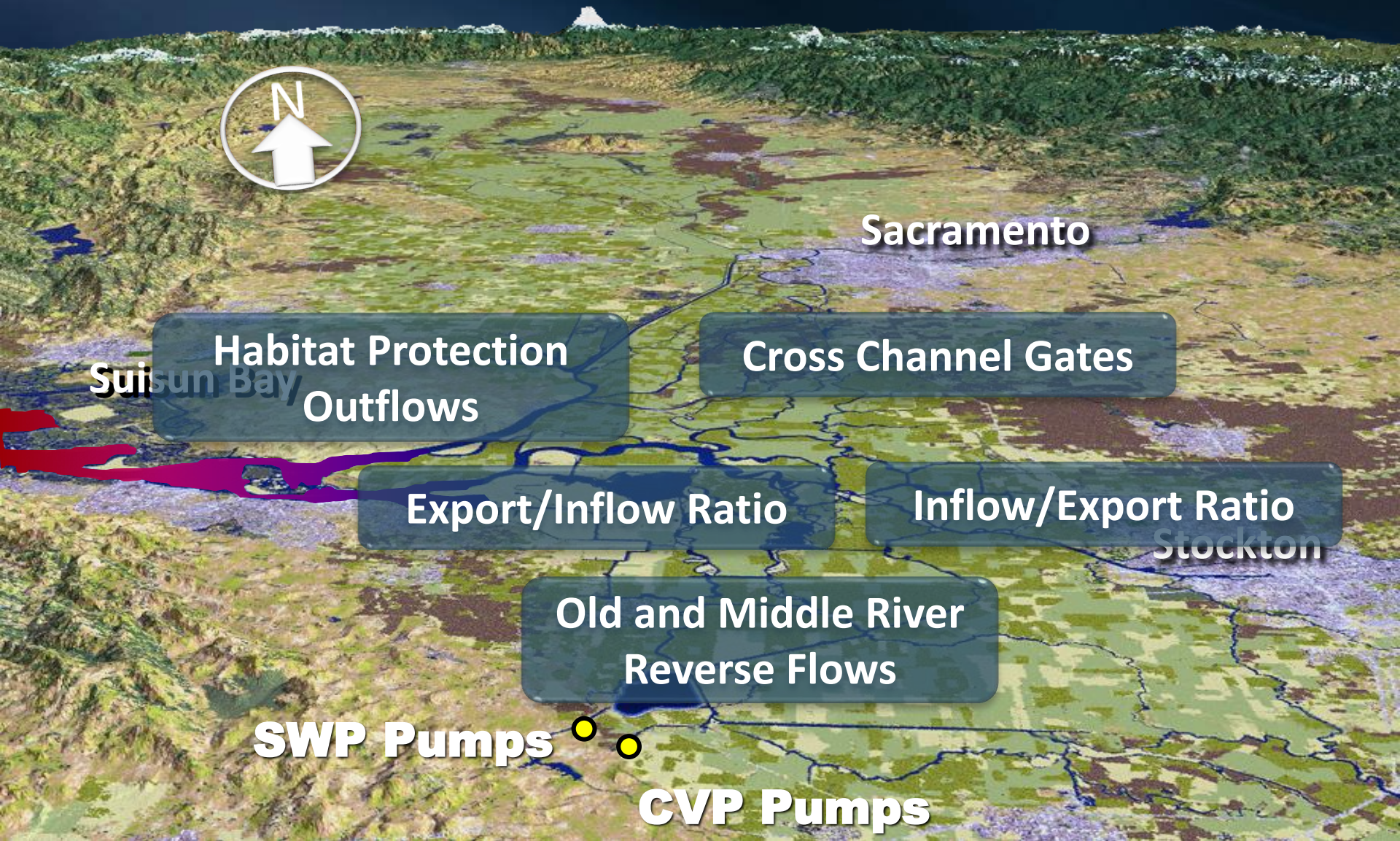
# How Do Regulations Affect Current Project Operations?

# Existing SWP and CVP Export Facilities are Located in the South Delta

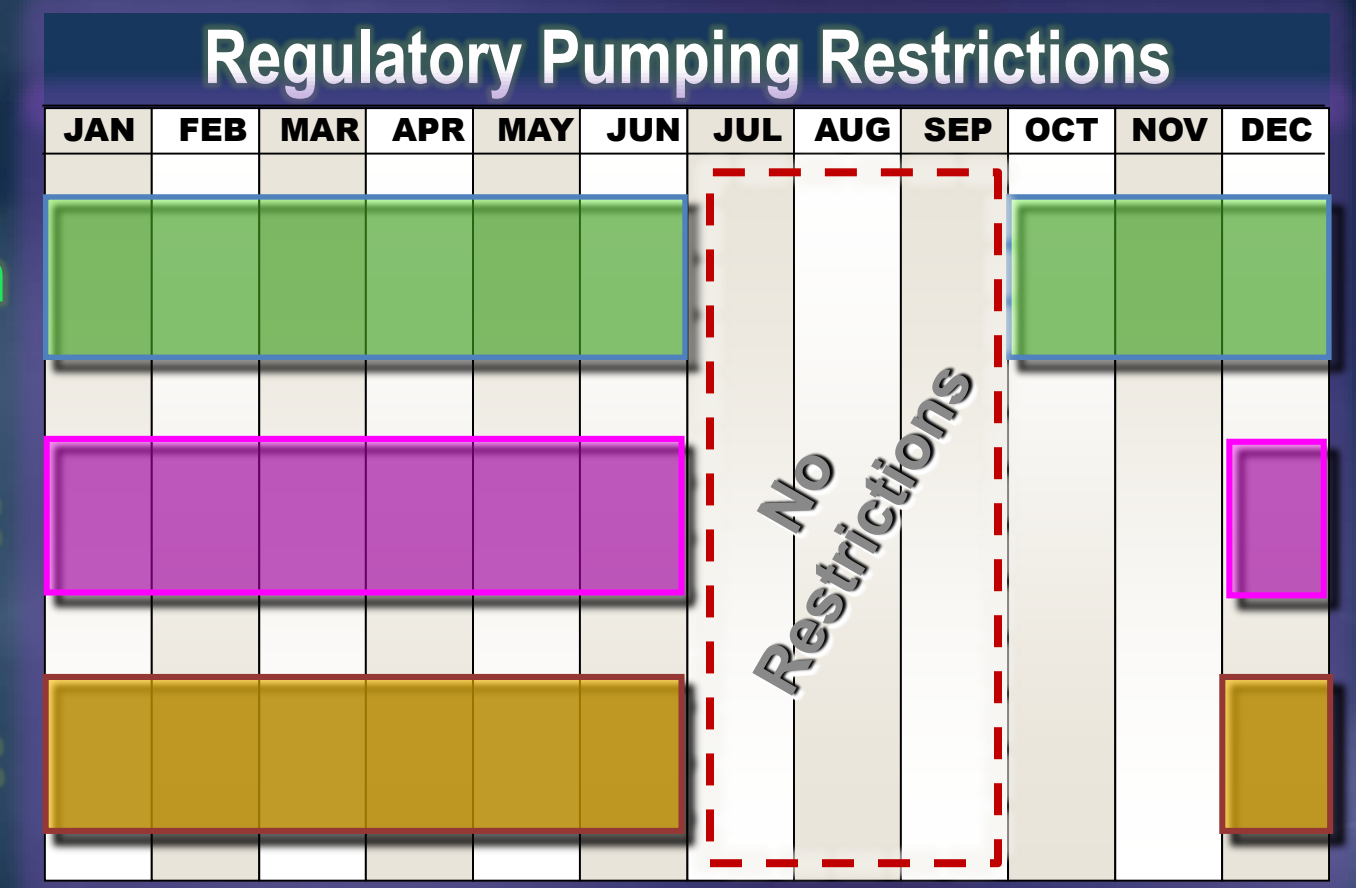


# Regulations Shape Current Operations

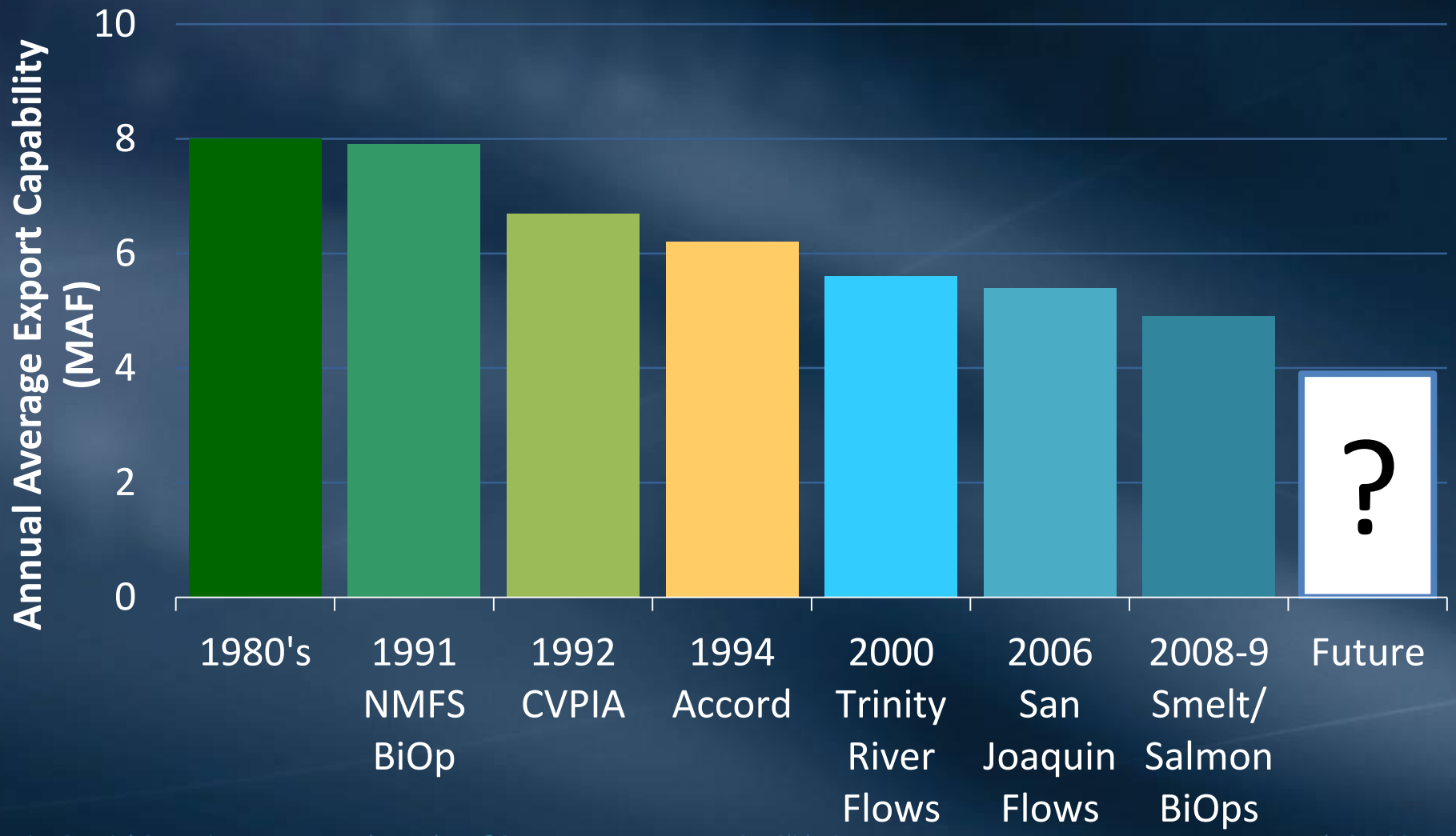
## D-1641 and 2008-2009 Biological Opinions



# Regulatory Approach has Reduced SWP-CVP Flexibility

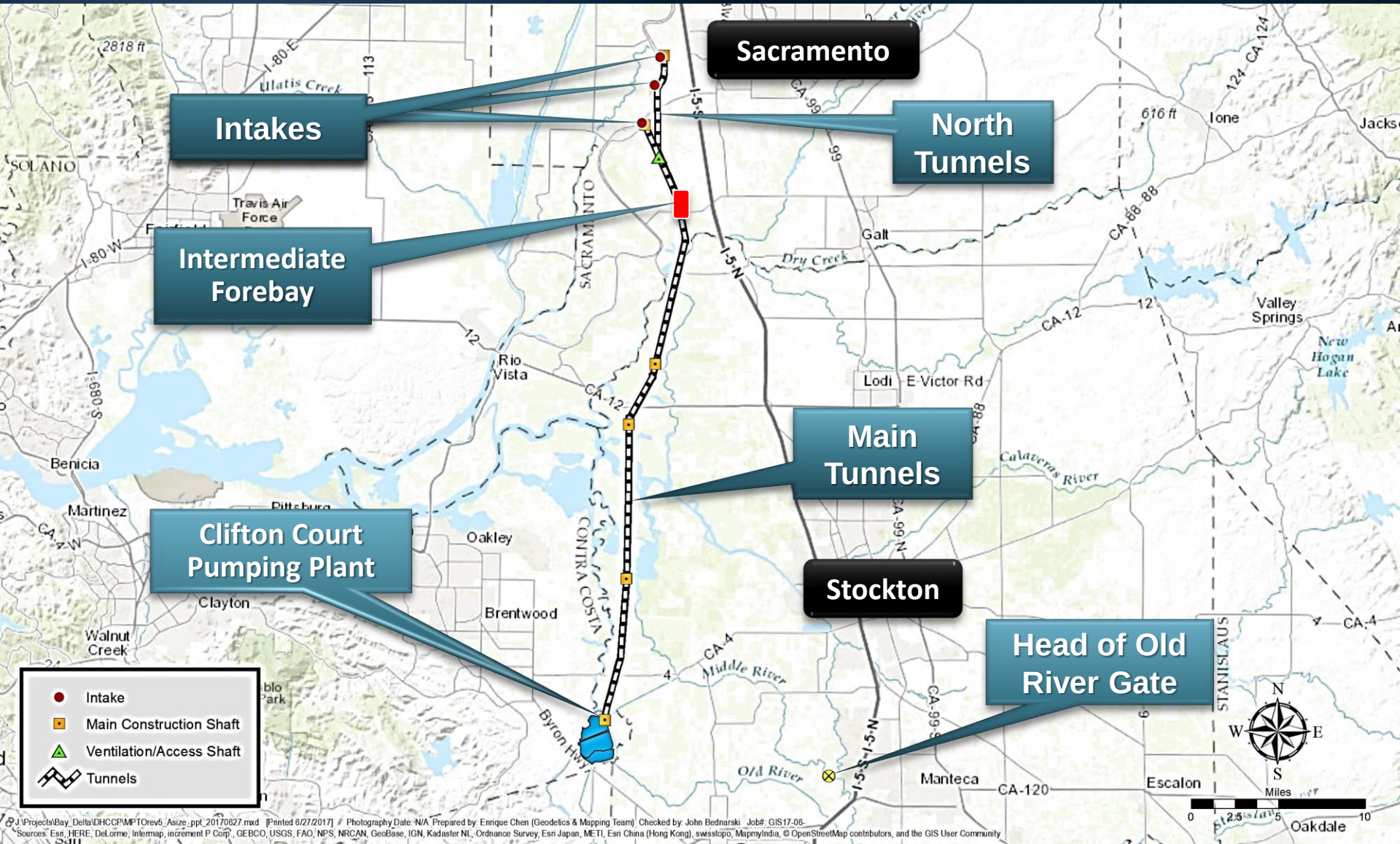


# SWP-CVP Export Capability Has Declined Due to Regulations

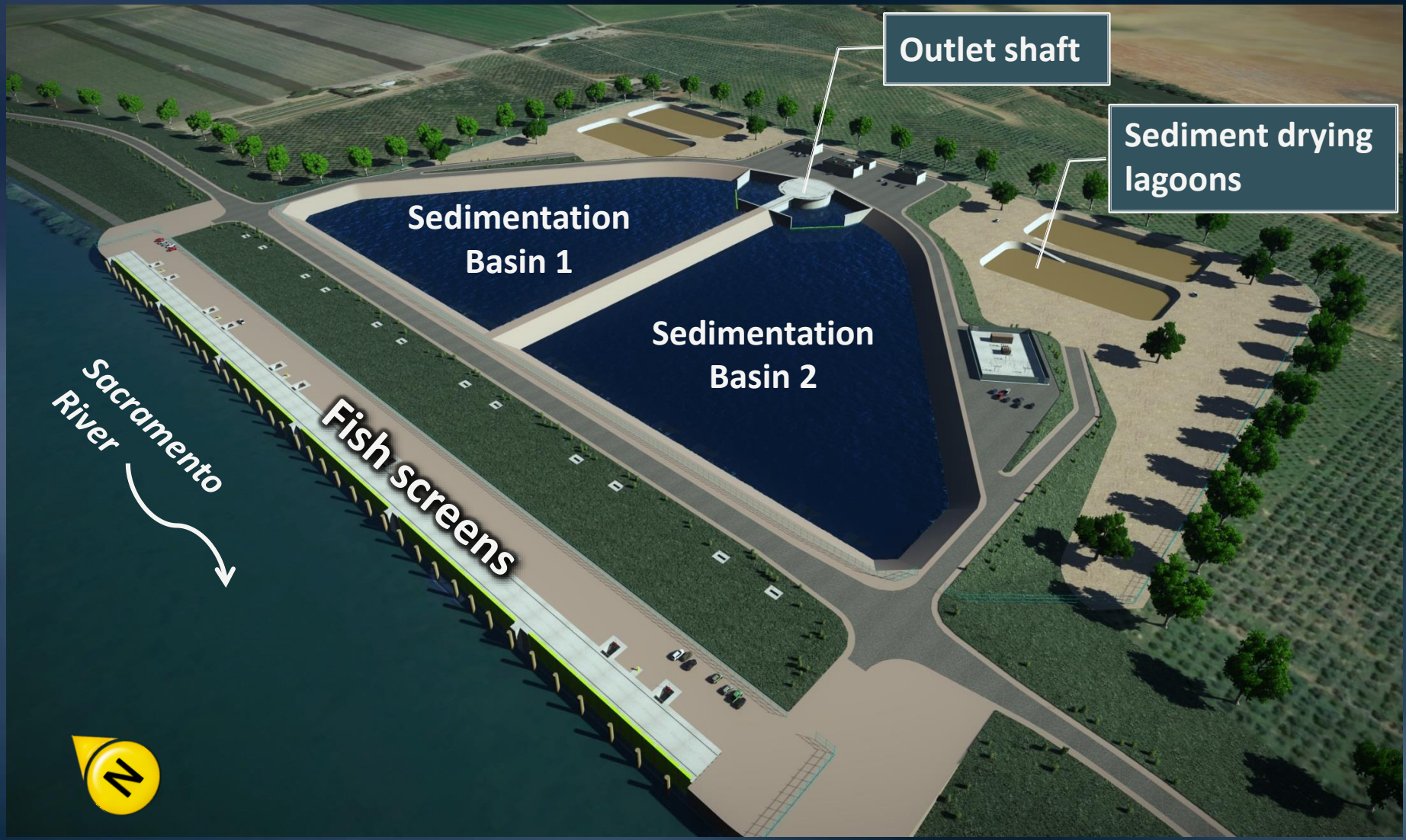


# What is the physical project and how does it improve operations under future regulations ?

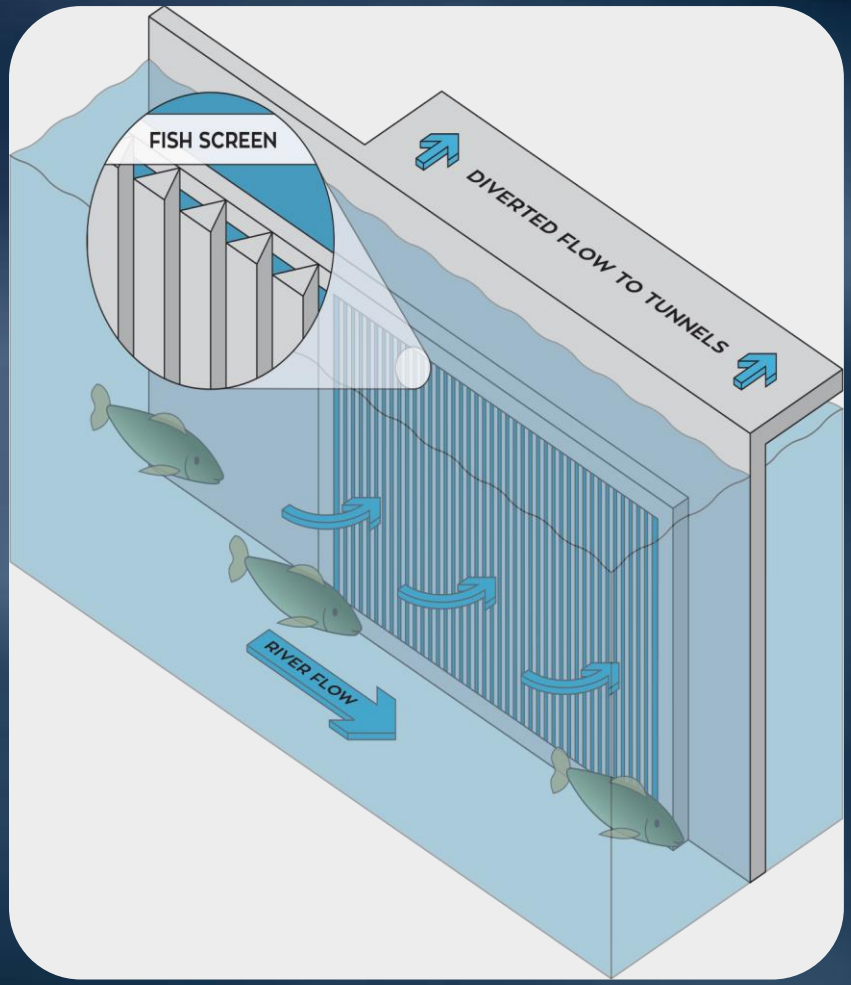
# California WaterFix - Overall Program

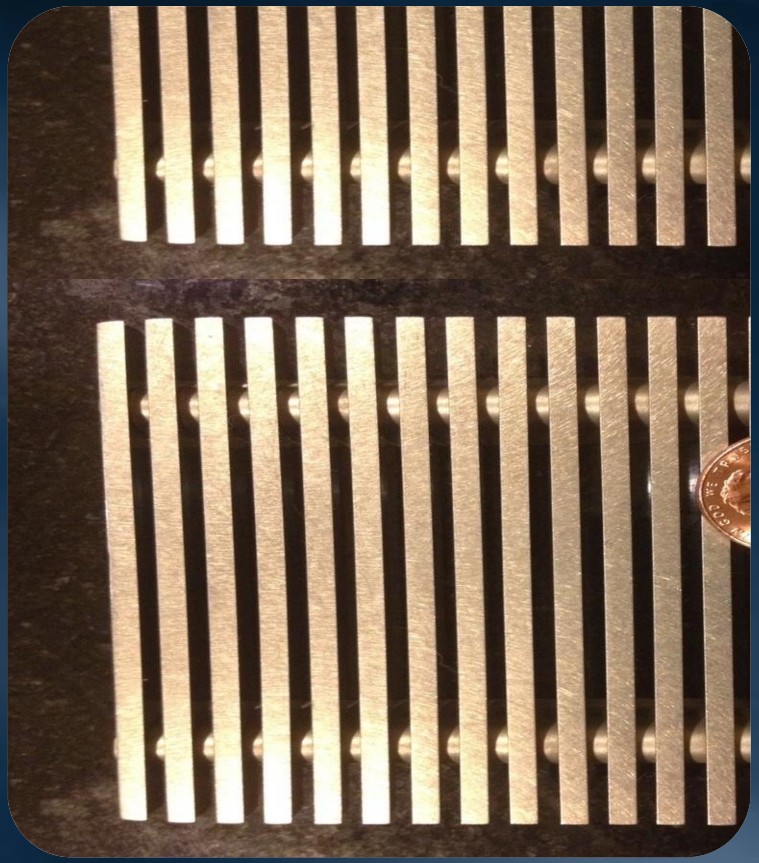


# River Intakes



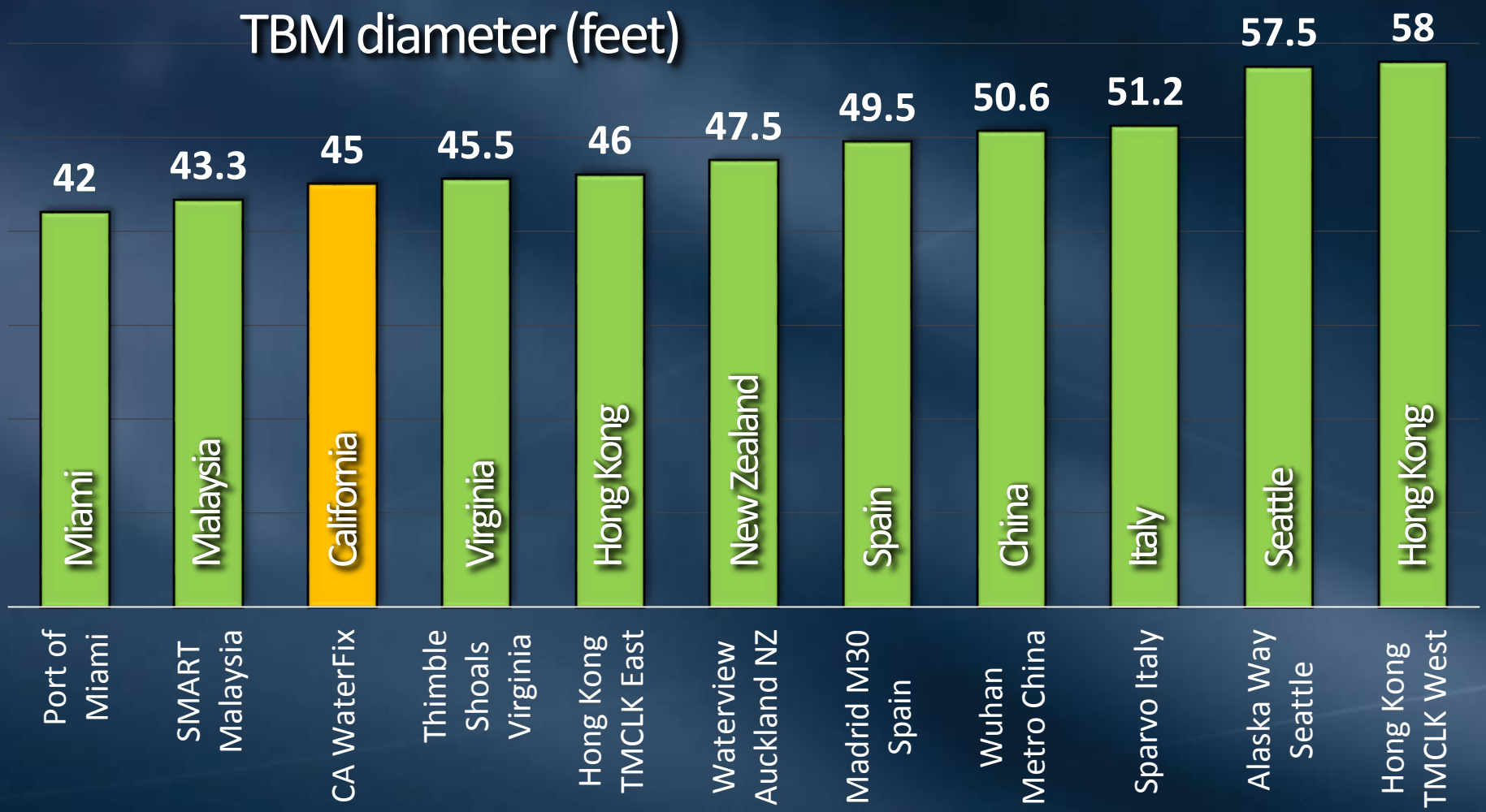
# Intakes Designed to Protect Fish



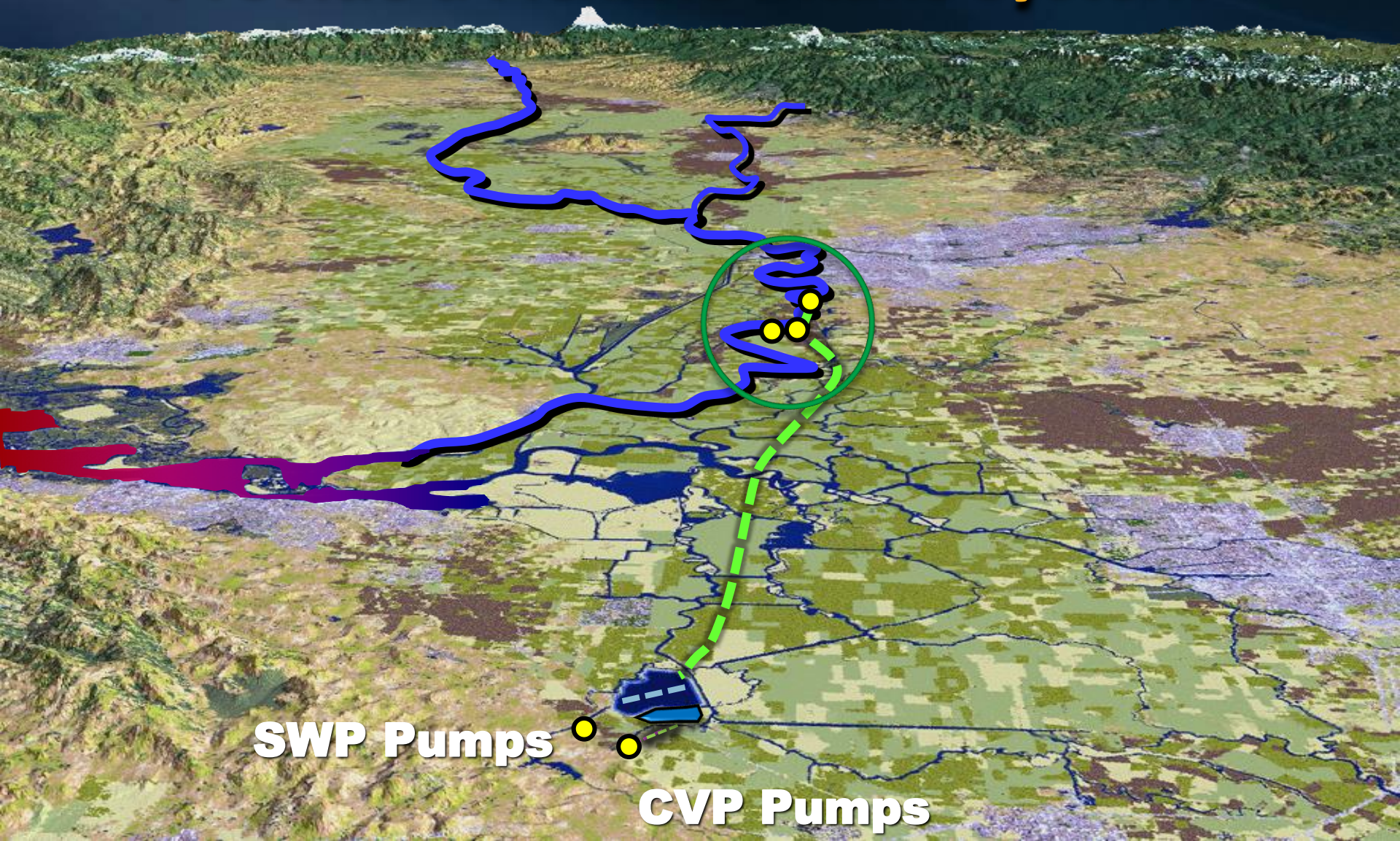



Screen spacing – 1.75mm
Flow approach velocity = 0.2 ft/sec

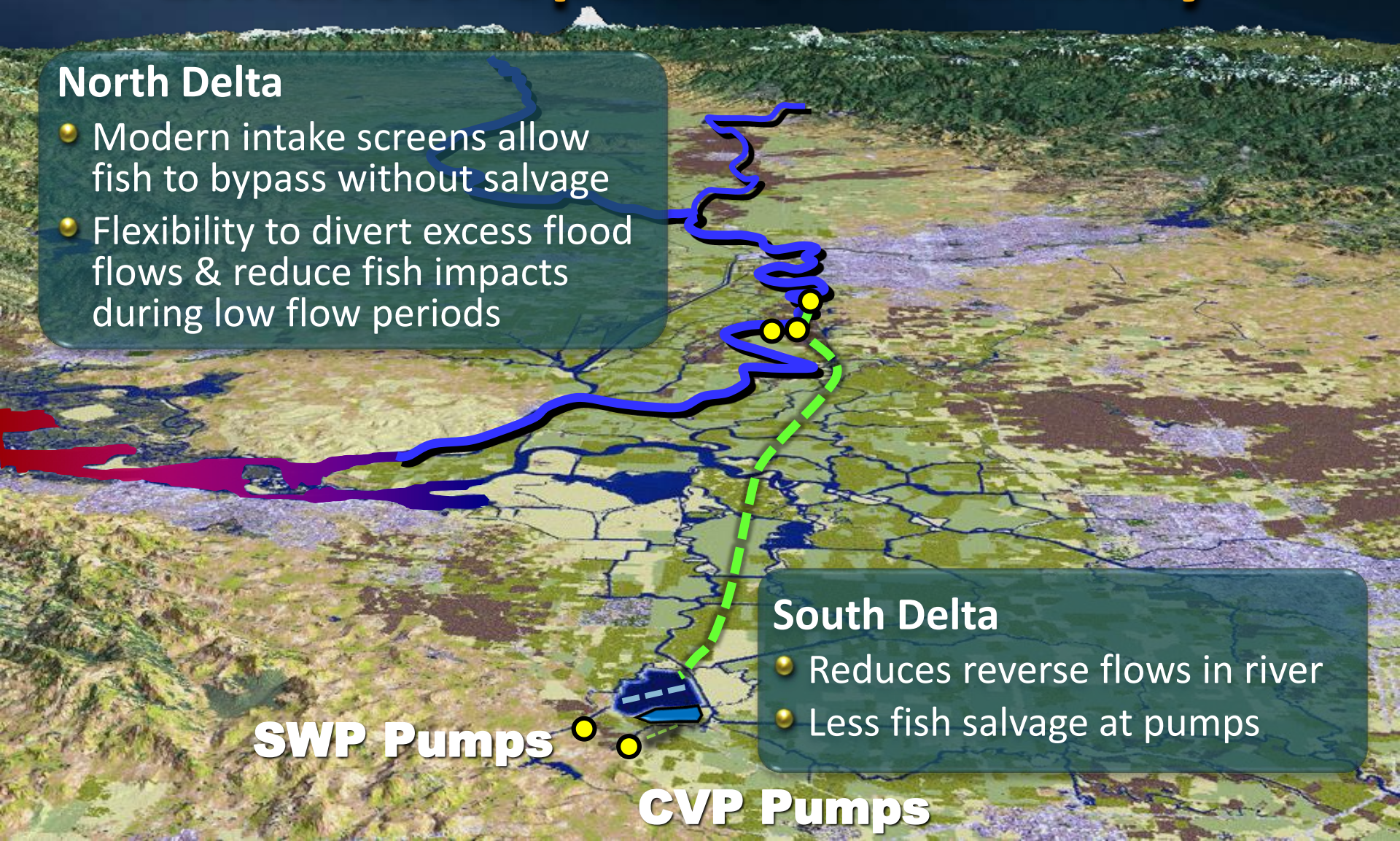
# Large Diameter Tunnel Boring Machine Projects



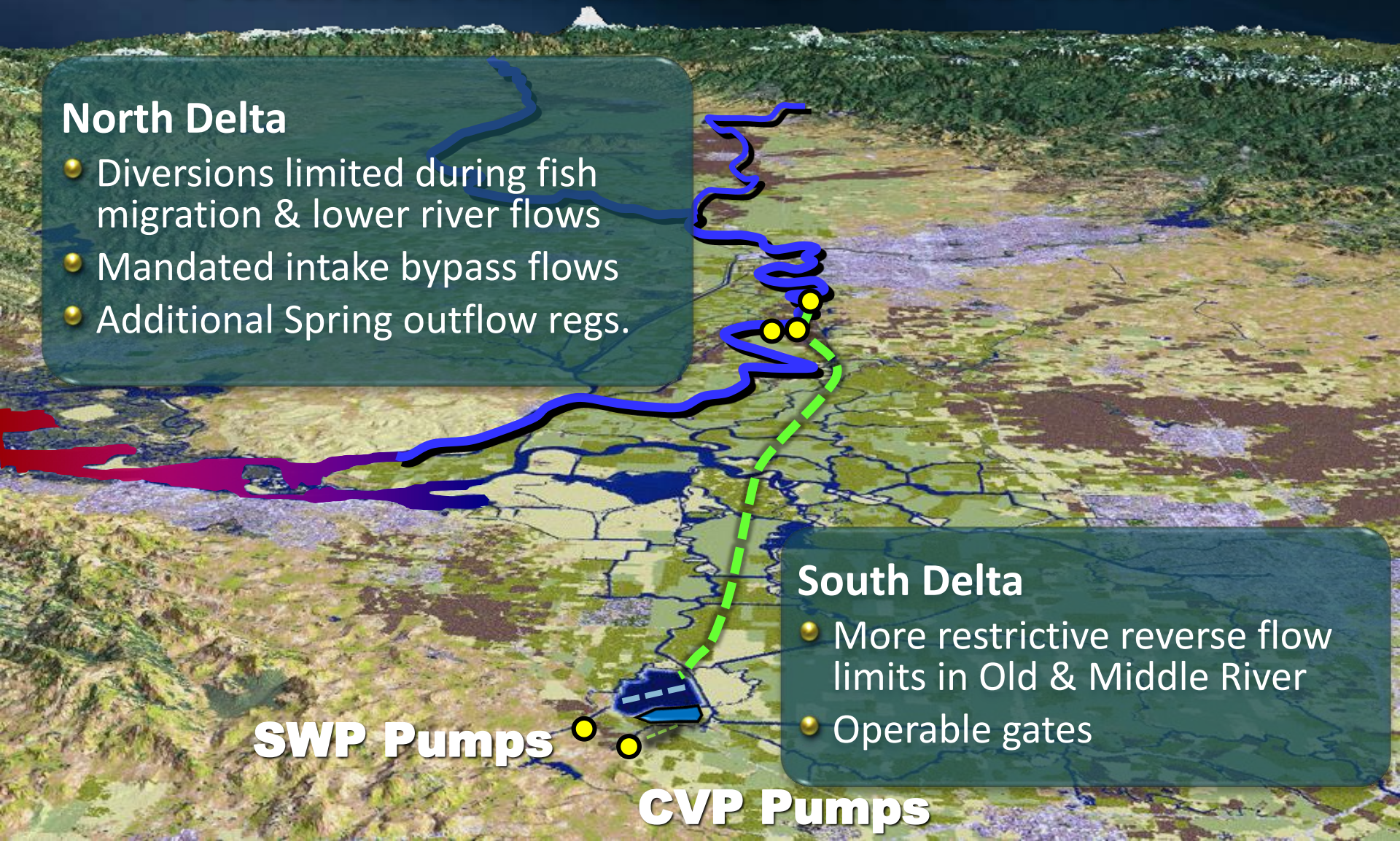
# New North Delta Diversions Provide a Flexible Intake System



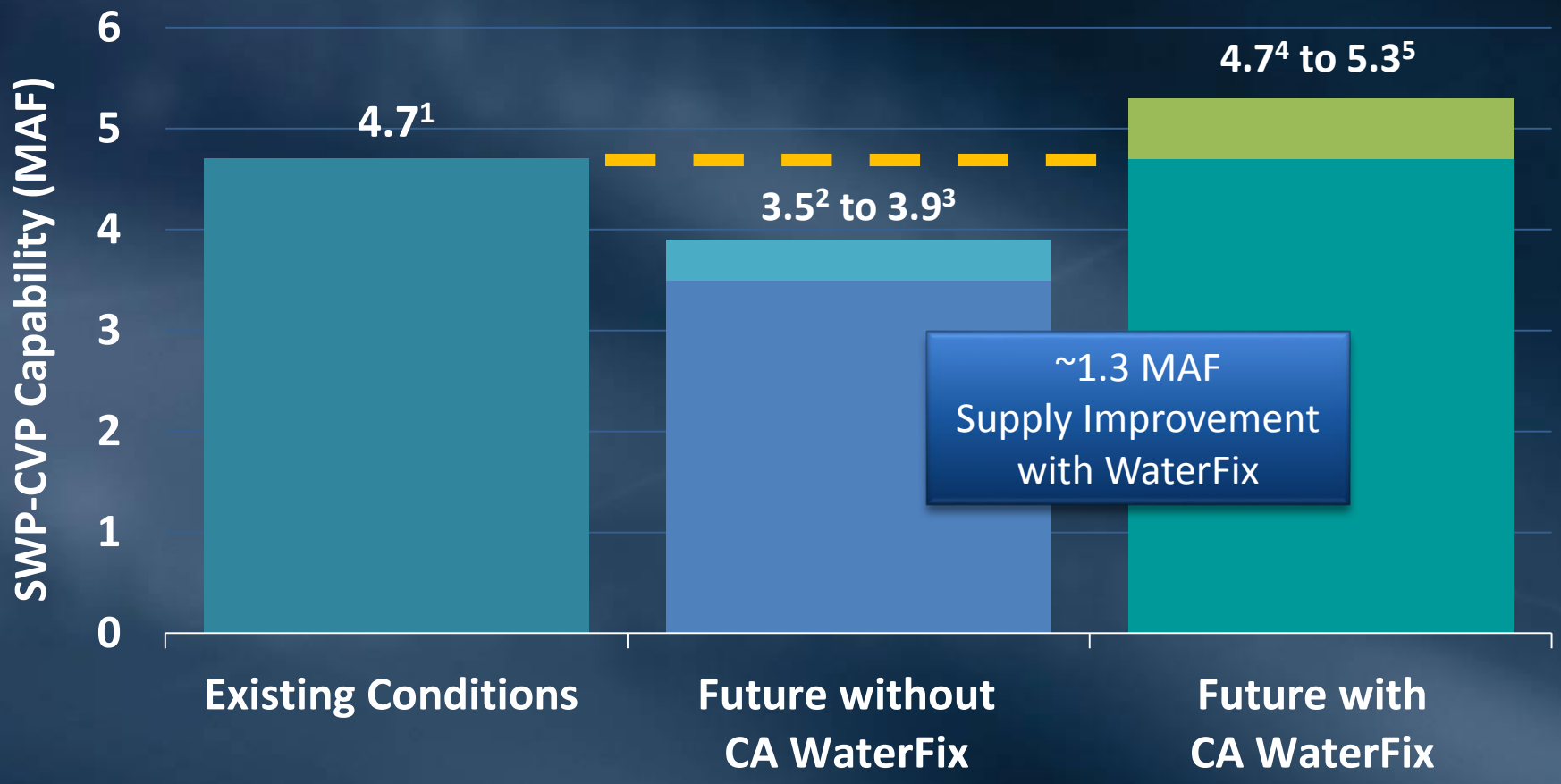
# CA WaterFix Provides Enhanced Operational Flexibility



# CA WaterFix Includes Additional Fisheries Protection



# Total Average Delivery Capability With and Without CA WaterFix




[1] California WaterFix EIR/EIS No Action Alternative, existing conditions with 2025 climate change impacts
[2] 2015 Delivery Capability Report Existing Conveyance High Outflow scenario
[3] 2015 Delivery Capability Report Existing Conveyance Low Outflow scenario
[4] California WaterFix EIR/EIS Alternative 4A-H4, initial operating criteria lower range
[5] California WaterFix EIR/EIS Alternative 4A-H3, initial operating criteria upper range

# Metropolitan Analysis of Excess Storm Flow
## Winter 2012-2013


*Increased export with California WaterFix ~ 781,000 acre-feet (thru Feb)*
*Analysis by State Water Contractors – Feb 2013*

# Additional Flexibility Provides Water Quality Benefits

- Continued compliance with D-1641 flow and salinity standards
- Improved export water quality
  - Protects human health
  - Enhances local water management programs

| Water Quality Constituent | Improvement |
|---|---|
| Electrical Conductivity | 18-22% |
| Total Dissolved Solids | 17-22% |
| Bromide | 31-34% |
| Dissolved Organic Carbon | 2-11% |
| Nitrate | 5-27% |

# Enhancing Ecosystem/Fishery Habitat Throughout Delta and Considering Delta Communities and the Environment

# Enhance Ecosystem Fishery Habitat Throughout Delta

- Improved flow patterns
- Reduced risk of entrainment
- Physical habitat actions


Photo by Morgan Bond

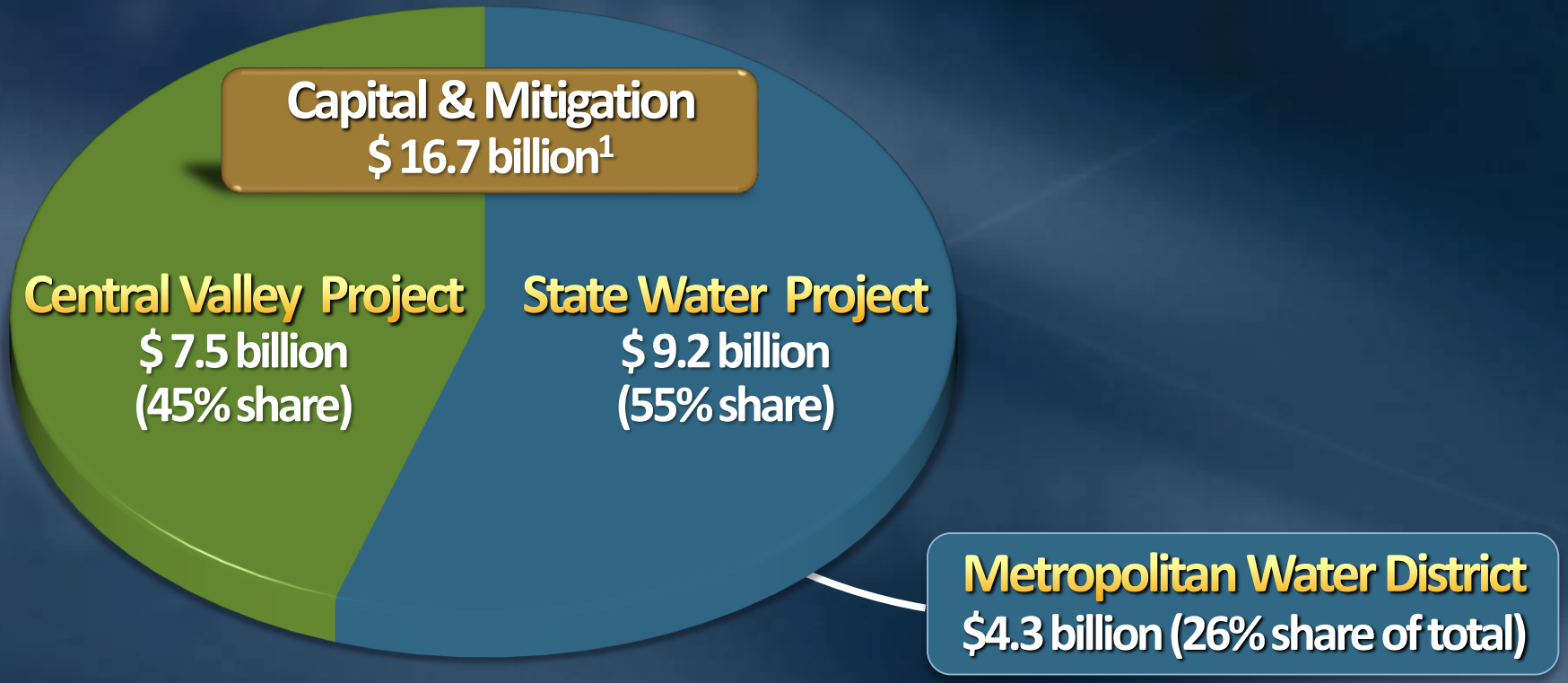

Photo by Jacob Katz


Photo by Joel Williams

# What are the cost impacts of California WaterFix?

# California WaterFix

## Capital Cost Share




1. *In 2017 dollars*

# Cost Impact Summary
## in 2017 Dollars

| | Base Case 4% Interest | 6% Interest Scenario | 8% Interest Scenario |
|---|---|---|---|
| **State Water Project Share** | | | |
| • SWP Total Annual Costs (Capital + O&M) | $438 M | $567 M | $709 M |
| **Metropolitan's Share Annual Project Cost** | | | |
| • Total Costs (47.13% of SWP) | $207 M | $268 M | $334 M |
| **Metropolitan's Cost Impact** | | | |
| • Metropolitan's Overall Cost Increase [1] | 13% | 17% | 21% |
| • Annual Cost Increase (spread over 15-yrs) | 0.9% | 1.1% | 1.4% |
| • Average Cost Increase per AF [2] | **$122/AF** | **$157/AF** | **$196/AF** |

*(1) Based on Metropolitan's 2017/18 Revenue Requirement of $1,574 M*
*(2) Based on Metropolitan's 2017/18 sales budget of 1.70 million acre-feet*

# WaterFix Marginal Cost
## at South Delta Pumps

- Calculation Method and Assumptions
  - Estimated incremental WaterFix supply = 1.3 MAF
  - Metropolitan incremental supply (26%) = 337 TAF
  - Annual cost to Metropolitan = $207 Million
  - Marginal cost = (Annual cost / 337 TAF)


- $613 per AF = ($207M / 337 TAF)

# WaterFix Marginal Cost

## Delivered & Treated to MWD Service Area

- Calculation Method and Assumptions
  - Marginal cost of WaterFix at Delta pumps = $613/AF
  - Marginal cost to convey & treat SWP supply = $227/AF
    - Power for transportation = $197/AF
    - Variable treatment costs = $ 30/AF
  - Marginal cost in MWD Service Area
    - Marginal Costs at Delta Pumps + Power & Variable Treatment


- $840 per AF = $613 + $227

# Household Impacts
## WaterFix

- Calculation Method and Assumptions
  - Residential water use = ~70% of total regional water use
  - Metropolitan's service area = ~6.2 million occupied households
  - Household impact calculation:
    - Monthly Impact = (Annual Cost x .70) / 6.2 million / 12 months
- Household Impacts
  - Base Case
    - $1.90 = ($207M x .70) / 6.2 Million / 12
  - 6% Interest Case
    - $2.50 = ($268M x .70) / 6.2 Million / 12
  - 8% Interest Case
    - $3.10 = ($334M x .70) / 6.2 Million / 12

# What is the cost of project alternatives?


# Alternative Resource Costs
## Member Agency Examples

- California WaterFix
  - Delivered & Treated[1] — $840/AF

- Recycled Water
  - Edward C. Little Water Recycling Facility[2] — $1,739 /AF
  - Local Resources Program (avg. of projects)[3] — $2,240/AF
  - San Diego Pure Water Project[4] — $1,975 – $2,375/AF
- Seawater Desalination
  - Carlsbad Desalination Project[5] — $2,412/AF
- Groundwater Recovery
  - Local Resources Program (avg. of projects)[3] — $1,157/AF

1. *WaterFix in 2017 dollars; includes costs to deliver and treat water to MWD's Service Areas (Power=$197/AF; Variable treament=$30/AF)*
2. *Unit cost from LRP FY2013/14 reconciliation with grants*
3. *Project unit cost from the Local Resources Program FY13/14 reconciliation; grants included in cost; in 2013 dollars*
4. *Unit costs in 2011 dollars and before grants or netting out avoided costs (from the June 14, 2012, SDCWA Board presentation); in 2011 dollars*
5. *Estimated unit cost from the June 2017 SDCWA Board presentation; in 2017 dollars*

# Water Supply Alternatives

## Average Cost Impact

| Alternatives | Average Cost Impact | |
|---|---|---|
| | Household[1] | Metropolitan[2] |
| California WaterFix | $1.90 / month | 13% increase |
| Recycling Focus | $4.50 / month | 31% increase |
| Desalination Focus | $6.90 / month | 47% increase |

1. *Household impact based on 6.2 million occupied residential households in MWD Service area, 70% residential / 30% industrial split*
2. *Based on Metropolitan's 2017/18 Revenue Requirement of $1,574 million*

# California Water Fix

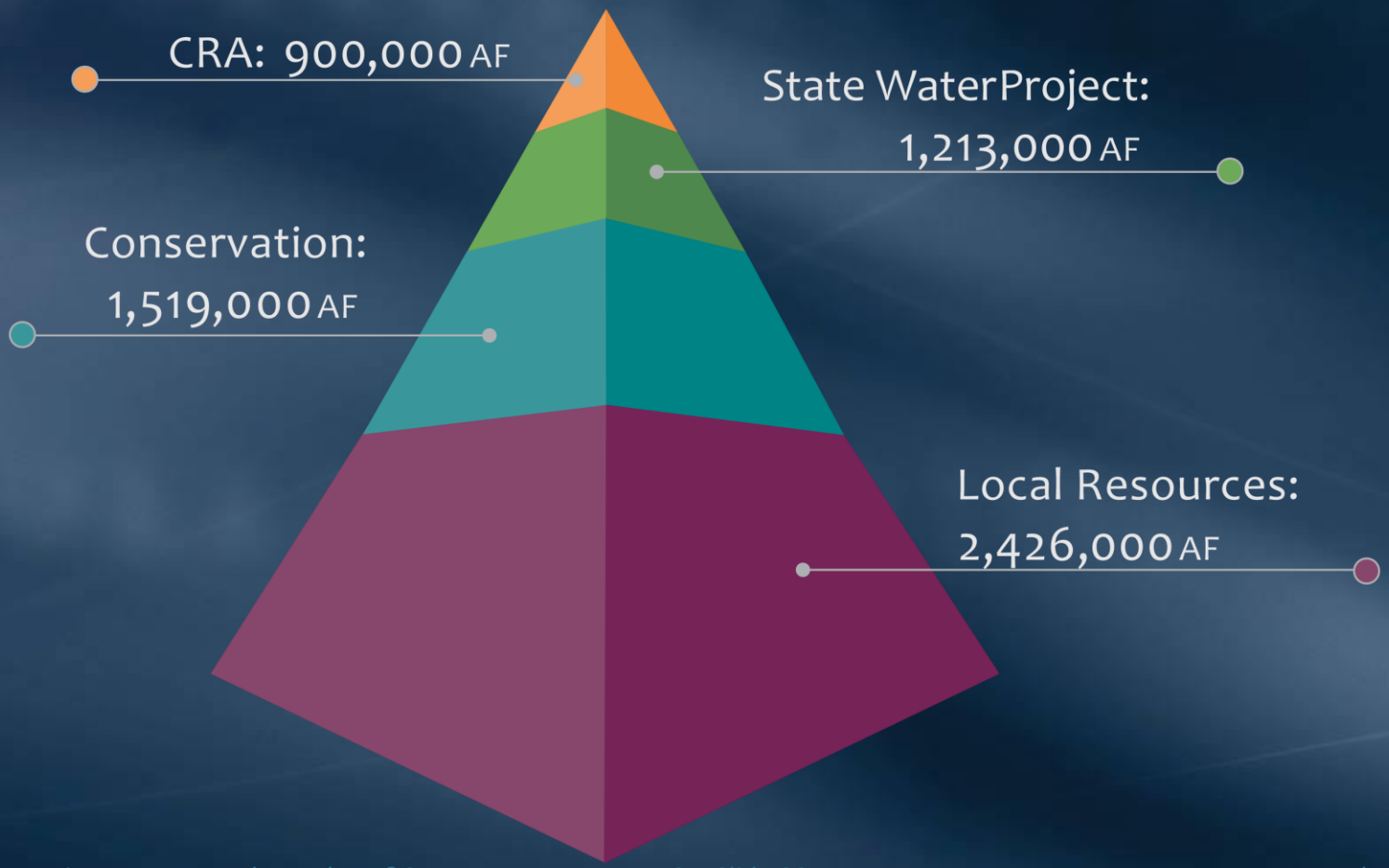
## Comparison to 10-Year Financial Forecast

# 2015 IRP Update

## RELIABILITY TARGETS

**The 2015 IRP Update is a plan to provide water supplies under a wide range of potential future conditions and risks**

## Meeting 2040 Demands



# Summary

- California WaterFix provides modernization to the state water system and improves supply reliability, water quality and environmental conditions
- California WaterFix works because it adds flexibility to operate the state water system and meet regulatory conditions and environmental needs
- California WaterFix is an affordable and cost-effective approach to meeting regional reliability goals

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